

# EXHIBIT O

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

BRIGHT RESPONSE, LLC  
F/K/A POLARIS IP, LLC

v.

GOOGLE INC., et al.

NO. 2:07CV-371-TJW-CE

**REPORT OF DEFENDANTS' EXPERT  
L. KARL BRANTING, PH.D, J.D.  
CONCERNING INVALIDITY OF CLAIMS 26, 28, 30, 31, 33, AND 38  
OF U.S. PATENT NO. 6,411,947**

## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>II.</b>	<b>QUALIFICATIONS.....</b>	<b>1</b>
<b>III.</b>	<b>LEGAL PRINCIPLES.....</b>	<b>3</b>
<b>IV.</b>	<b>OVERVIEW OF THE '947 PATENT.....</b>	<b>6</b>
A.	THE '947 PATENT GENERALLY.....	7
B.	THE '947 PATENT CLAIMS.....	10
C.	CHARACTERISTICS OF THE METHODS AND SYSTEM CLAIMED BY THE '947 PATENT.....	12
1.	<i>A method for automatically processing a non-interactive electronic message using a computer (Claim 26[preamble]).</i> .....	12
2.	<i>Receiving the electronic message from a source (Claim 26[a]).</i> .....	12
3.	<i>Interpreting the electronic message using a rule base and case base knowledge engine (Claim 26[b]).</i> .....	13
4.	<i>Retrieving one or more predetermined responses corresponding to the interpretation of the electronic message from a repository for automatic delivery to the source (Claim 26[c]).</i> .....	13
5.	<i>Ordering</i> .....	13
6.	<i>Dependent Claims</i> .....	13
<b>V.</b>	<b>THE SCOPE AND CONTENT OF THE PRIOR ART.....</b>	<b>15</b>
A.	THE PRIOR ART GENERALLY.....	15
B.	EXEMPLARY PRIOR ART REFERENCES.....	20
1.	<i>Allen</i> .....	20
2.	<i>CBR-Express</i> .....	25
3.	<i>Nguyen</i> .....	27
4.	<i>EZ Reader</i> .....	32
5.	<i>GREBE</i> .....	41
6.	<i>Goodman</i> .....	44
7.	<i>Watson</i> .....	48
<b>VI.</b>	<b>THE ASSERTED CLAIMS OF THE '947 PATENT ARE INVALID AS ANTICIPATED.....</b>	<b>52</b>
A.	ALLEN ANTICIPATES CLAIMS 26, 28, 30, 31, AND 38.....	52
1.	<i>Allen anticipates Claim 26.</i> .....	53
2.	<i>Allen anticipates Claim 28.</i> .....	56
3.	<i>Allen anticipates Claim 30.</i> .....	57
4.	<i>Allen anticipates Claim 31.</i> .....	58
5.	<i>Allen anticipates Claim 38.</i> .....	59
B.	THE CBR EXPRESS MANUALS ANTICIPATE AND RENDER OBVIOUS CLAIMS 26, 28, 30, 31, AND 33.....	60
1.	<i>The CBR Express Manuals anticipate and render obvious claim 26.</i> .....	61
2.	<i>The CBR Express Manuals anticipate and render obvious claim 28.</i> .....	63
3.	<i>The CBR Express Manuals anticipate and render obvious claim 30.</i> .....	64
4.	<i>The CBR Express Manuals anticipate and render obvious claim 31.</i> .....	66
5.	<i>The CBR Express Manuals anticipate and render obvious claim 33.</i> .....	67
C.	NGUYEN ANTICIPATES CLAIMS 26 AND 28.....	67
1.	<i>Nguyen anticipates Claim 26.</i> .....	67
2.	<i>Nguyen anticipates Claim 28.</i> .....	72
D.	EZ READER ANTICIPATES CLAIMS 26, 28, 30, 31, 33, AND 38.....	73
1.	<i>EZ Reader anticipates claim 26.</i> .....	76
2.	<i>EZ Reader anticipates claim 28.</i> .....	78
3.	<i>EZ Reader anticipates claim 30.</i> .....	78
4.	<i>EZ Reader anticipates claim 31.</i> .....	80
5.	<i>EZ Reader anticipates claim 33.</i> .....	80
6.	<i>EZ Reader anticipates claim 38.</i> .....	80

E.	GREBE ANTICIPATES CLAIMS 26. ....	81
<b>VII.</b>	<b>THE ASSERTED CLAIMS OF THE '947 PATENT ARE OBVIOUS .....</b>	<b>83</b>
A.	THE '947 PATENT IS A COMBINATION OF PRIOR ART ELEMENTS. ....	85
B.	THE COMBINATIONS IN THE '947 PATENT CLAIMS ARE PREDICTABLE AND DO NOT YIELD ANY UNPREDICTABLE RESULTS.....	96
1.	<i>The Combinations In the '947 Patent Are Predictable</i> .....	96
2.	<i>The Combinations In the '947 Patent Do Not Yield Unpredictable Results</i> .....	101
C.	ONE SKILLED IN THE ART WOULD HAVE BEEN MOTIVATED TO PURSUE THE CLAIMED COMBINATIONS THROUGH MARKET FORCES AND TRENDS .....	102
<b>VIII.</b>	<b>THE <i>GRAHAM</i> FACTORS DEMONSTRATE THAT THE '450 PATENT CLAIMS WHICH MERELY COMBINE KNOWN ELEMENTS ARE OBVIOUS.....</b>	<b>104</b>
A.	THE SCOPE AND CONTENT OF THE PRIOR ART .....	104
B.	DIFFERENCES BETWEEN THE PRIOR ART AND THE CLAIMS AT ISSUE .....	105
C.	LEVEL OF ORDINARY SKILL IN THE PERTINENT ART.....	107
D.	THE SECONDARY CONSIDERATIONS SET FORTH IN <i>GRAHAM</i> DO NOT ALTER THE CONCLUSION OF OBVIOUSNESS.....	108
<b>IX.</b>	<b>TO THE EXTENT THAT THE ASSERTED CLAIMS ARE READ TO COVER GRADIENT DESCENT ALGORITHMS AND LOGISTIC REGRESSION, THEY ARE OBVIOUS.....</b>	<b>111</b>
<b>X.</b>	<b>TO THE EXTENT THAT THE ASSERTED CLAIMS ARE READ TO COVER SEARCH QUERIES, THEY ARE INVALID FOR LACK OF ADEQUATE WRITTEN DESCRIPTION. ....</b>	<b>113</b>
<b>XI.</b>	<b>MATERIALITY OF OMITTED REFERENCES.....</b>	<b>113</b>
<b>XII.</b>	<b>CONCLUSIONS .....</b>	<b>114</b>

troubleshooting knowledge and expertise directly with the product, allowing consumers to solve most of their problems entirely on their own and to use Compaq's help desk as a back up facility.”)

166. Accordingly, Nguyen meets this element.

**D. EZ Reader anticipates claims 26, 28, 30, 31, 33, and 38.**

167. As disclosed in section V.B.4, EZ Reader was an email response system in use at Chase Manhattan Bank. According to the EZ Reader article, it was deployed in the first quarter of 1996, and was capable of handling up to 80% of incoming mail automatically.

168. EZ Reader performs the same functions as the preferred embodiment of the '947 patent (“preferred embodiment”). The purpose of both EZ Reader and the '947 patent is to automate the handling of electronic messages by classifying the message as either routine—and therefore amenable to a stock response—or non-routine, which is then routed to a human agent for handling. (EZ Reader Manual p. 10; '947 patent 2:63-67.) The similarity of these purposes is evident from the fact that Figure 2 of Rice, captioned “Email path through ChaseDirect” is almost identical to Figure 1 of the '947 patent, “a block diagram showing the automatic message interpreting and routing system of the preferred embodiment of the present invention” ('947 patent 3:53-55).

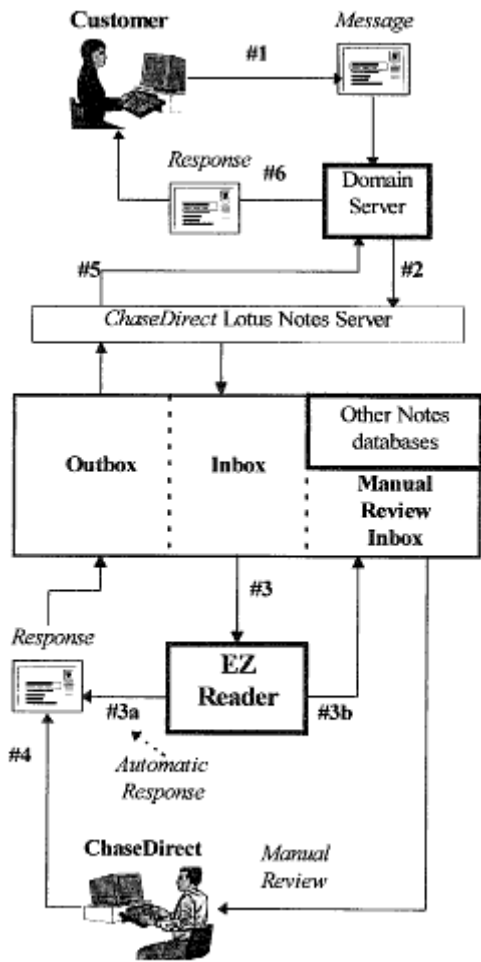
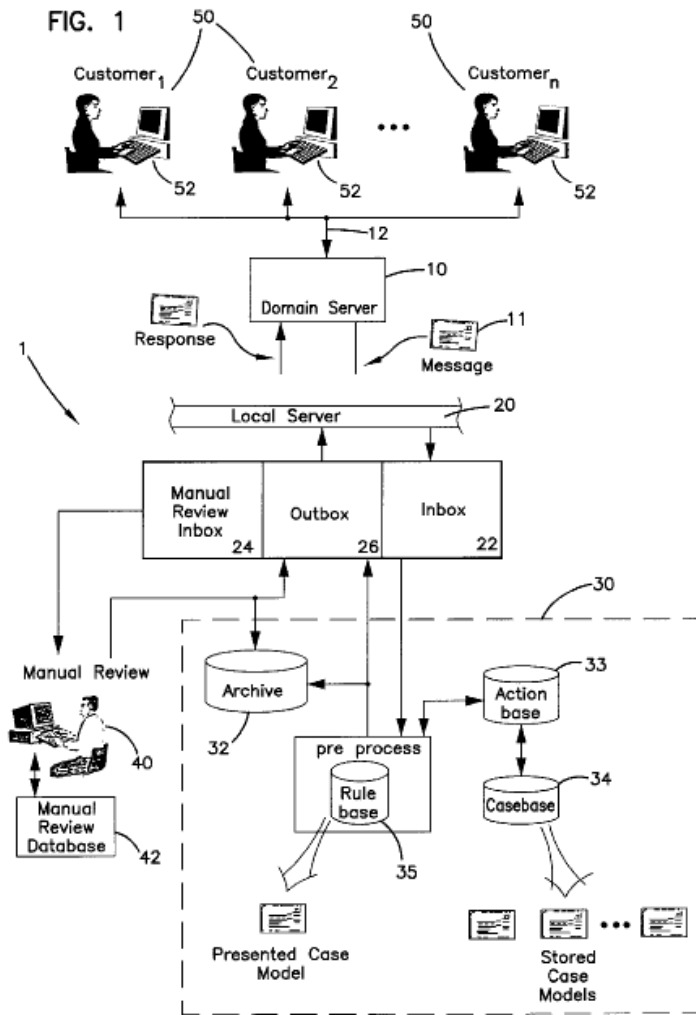
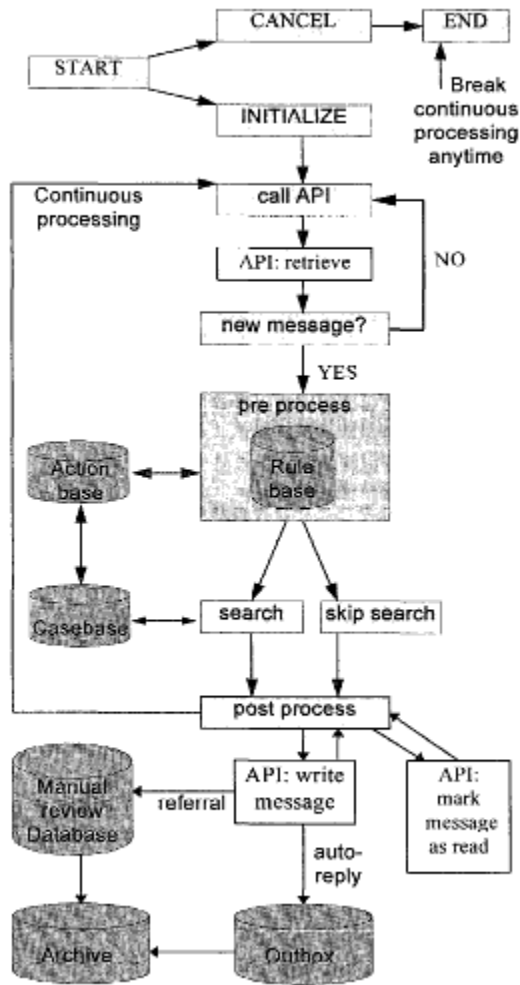


Figure 2. Email Path through ChaseDirect



The two figures differ primarily in that the rule-based and case-based classification system is summarized as a block titled “EZ Reader” in Rice et al. Figure 2, with the contents of the EZ Reader block shown in Rice et al. Figure 3, whereas in '947 patent Figure 1 the two figures are merged.



169. Both the EZ Reader and the preferred embodiment are implemented in the same CBR shell, ART\*Enterprise (Rice et al. p. 1508; EZ Reader Manual p. 19; '947 patent 5:57-59). As noted previously, ART\*Enterprise uses the same CBR engine as CBR Express and CasePoint. (See above.)

170. The paper describing the EZ Reader application was submitted as provisional application No. 60/042,494, to which the '947 patent claims priority. Furthermore, half of the EZ Reader Manual was submitted as application No. 60/042,656, to which the '947 patent also

claim priority.<sup>18</sup> Accordingly, one would expect that all elements of the '947 claims would be present in EZ Reader. Nonetheless, I will analyze the system below.

**1. EZ Reader anticipates claim 26.**

171. **Non-interactive electronic message:** The preamble requires that the method process a “non-interactive electronic message.” The '947 patent further claims that “[i]t is preferred that the electronic messages 11 are E-mail messages.” ('947 patent 4:10-11.) The Rice paper discloses that EZ Reader functions on Email: “EZ Reader is an intelligent electronic mail (email) that employs a unique combination of rule-based and case-based reasoning.” (Rice 1507, Abstract.) The EZ Reader Manual confirms that the system that operates on email: “As a new piece of mail comes in, EZ Reader retrieves the message and compares it to a library of actual customer messages, and categorizes the message.” (EZ Reader Manual p. 18.) Thus, EZ Reader discloses processing non-interactive electronic messages, specifically email.

172. **Receiving an electronic message:** EZ Reader receives electronic messages, specifically email: “The customer sends an email to Chase Manhattan Bank’s Internet address.... EZ Reader periodically checks the inbox (a Lotus Notes mail database) for new mail. When a new email arrives in the inbox, EZ Reader retrieves the message.” (Rice 1509.) “As a new piece of mail comes in, EZ Reader retrieves the message and compares it to a library of actual customer messages, and categorizes the message.” (EZ Reader Manual p. 18.)

173. **Interpreting the electronic message:** EZ Reader discloses interpreting the electronic message using rule-base and case-base reasoning. As the Abstract of the Rice article discloses, EZ Reader “employs a unique combination of rule-based parsing and case-based reasoning to automatically and with a high level of accuracy classify and respond to large volumes of incoming email.” Rice 1509: “EZ Reader retrieves the message and ‘interprets’ it by performing rule-based parsing and case-based retrieval.” EZ Reader uses “question” rules to set

---

<sup>18</sup> The application omits the sections of the EZ Reader User’s Guide that include the February 1996 datestamp (EZ Reader User’s Guide 2) and that state that EZ Reader is currently in use at Chase (*Id.* 6).



attributes and actions on the message. (EZ Reader Manual p. 19, 29, 36.) In the event the RBR system does not set an action for the message, EZ Reader uses a CBR system to locate a matching case. (*Id.* p. 54.)

174. **Retrieving predetermined responses:** EZ Reader retrieves predetermined responses based on the interpretation of the message. *See* Rice 1509: “The outcome of its interpretation is one of two possibilities: a) EZ Reader can respond to the email automatically. An automatic response, which is routed directly to the ChaseDirect outbox, consists of the original email and one or more attachments, or prepared replies, that are retrieved from a Lotus Notes repository of standard responses.”

**Process Flow**

Figure 2. illustrates the flow of an email through the EZ Reader system as described below:

1. The customer sends an email to Chase Manhattan Bank’s Internet address.
2. Chase’s corporate email router passes the message from the domain server to ChaseDirect’s Lotus Notes server.
3. EZ Reader periodically checks the inbox (a Lotus Notes mail database) for new mail. When a new email arrives in the inbox, EZ Reader retrieves the message and “interprets” it by performing rule-based parsing and case-based retrieval. The outcome of its interpretation is one of two possibilities:
  - a) EZ Reader can respond to the email automatically. An automatic response, which is routed directly to the ChaseDirect outbox, consists of the original email and one or more attachments, or prepared replies, that are retrieved from a Lotus Notes repository of standard responses.
  - b) EZ Reader cannot respond to the email automatically. It refers the email to ChaseDirect for human review and response. Before placing the email in the manual review inbox, EZ Reader assigns a category and priority to the message and suggests one or more standard replies based on message content. (Categories and priorities are described in more detail later.)

175. *See also* EZ Reader Manual p. 10. Accordingly, EZ Reader meets all the elements of claim 26.

**2. EZ Reader anticipates claim 28.**

176. Claim 28 requires classifying the message as automatic and/or requiring human assistance, and then retrieving responses if the message has been classified as automatic. As detailed in step 3 and sub-steps 3a and 3b, EZ Reader classifies messages as automatic or requiring human assistance. *See also* EZ Reader Manual p. 41. EZ Reader retrieves and uses prepared responses if the new case is classified as automatic. (EZ Reader Manual p. 10.) Thus, EZ Reader meets this claim element.

**3. EZ Reader anticipates claim 30.**

177. As detailed in Section IV.C.6(b), claim 30 has a number of steps that relate to the manner in which the case-base retrieval function operates. CBR Express includes all of these steps.

178. Step (b1) requires building a case model that includes attributes and message text. EZ Reader discloses this limitation: The case-base process is dependent upon rules to derive its presented case feature values. In EZ Reader, rules fire before the case-based reasoning process to extract features or characteristics of the email that help distinguish the content of the message.... For example, if EZ Reader infers from incoming email text that the sender does not want to be telephoned by ChaseDirect, the rule for do-not-call-customer? fires and sets that attribute in the case to “Yes.” (Rice 1512-1513.) Rice also discloses a “message text” attribute which contains the content of the message text. (Rice 1513.)

179. Step (b2) requires detecting patterns of text within the message text. Rice discloses processing a new message with “attribute setting” rules to infer case attributes such as that the customer does not wish to be called (Rice et al. p. 1513) and “action” rules that can add useful information about the message or classify the message without requiring the case-based reasoning step (Rice et al. p. 1513, Rice et al. Figure 3 “skip search” block). These rules are implemented using textual pattern matching:

```

RULE foreign-phone
(or
(masked-member$ "+99 " ?message-body)
(masked-member$ "+99-" ?message-body)
(masked-member$ "(+99)" ?message-body)
etc.
)
any other conditions...
=>
(printout "Foreign phone number detected.")
any other actions...

```

180. Step (b3) requires flagging attributes in the case model. As indicated above, EZ Reader does this during its text processing stage. For instance, matching the textual patterns for “foreign-phone” would result in the “foreign-phone” attribute being set. (Rice 1511.)

181. Step (b4) requires comparing the attributes of the presented case model with the attributes of stored case models. EZ Reader discloses this limitation. For instance, two cases in the case base may differ in that one has the “address?” field flagged. If an incoming email contains an address, the “address?” field will also be triggered in the presented case model. EZ Reader will then detect that one of the stored cases has the “address?” field—just like the presented case—and rank that stored case higher. (Rice 1513.)

182. Step (b5) requires comparing the message text of the presented case model with the message text of the stored case models. In EZ Reader, message text is simply another attribute, which is compared as in step (b4). (Rice 1512.) EZ Reader also explicitly discloses comparing message text: [s]tandard case-base scoring for the message text of an email (as for all text type features” is driven by Art\*Enterprise’s default trigram character-matching algorithm.” Thus, EZ Reader meets this claim element.

183. Step (b6) requires computing match scores for each case based on matching attributes. EZ Reader discloses this limitation: “if the value in a feature of the stored email matches the value in the corresponding feature of the incoming email, the feature’s match weight is add [sic] to the stored email’s score. If the feature’s value mismatches, the feature’s mismatch weight, typically a negative value, is added to the score.” (Rice 1512.)

184. Accordingly, EZ Reader meets all the limitations of claim 30. Note also that these limitations are all implemented by ART\**Enterprise*: “EZ Reader searches the case-base assigning relative scores to each stored case based on the number of features, the mismatch of feature values and the absence of features as compared with the presented case using customizable case-based reasoning components supplied in the ART\**Enterprise* tool.” (Rice 1512.)

**4. EZ Reader anticipates claim 31.**

185. Claim 31 is similar to step (b6) of claim 30, except that it requires predetermine match weights and mismatch weights. As disclosed in step (b6), features within the case base have corresponding and predetermined match weights and mismatch weights.

186. EZ Reader requires that the mismatch-weight be customized to zero. (Rice 1512.) However, claim 31 allows for zero mismatch weights as well, as dependent claim 32 specifically requires that the mismatch weight be zero. Accordingly, EZ Reader meets all the limitations of claim 31.

**5. EZ Reader anticipates claim 33.**

187. Claim 33 requires that the match score be normalized by dividing it by the maximum possible match score. The Rice paper discloses that “[s]ince stored cases can contain different numbers of features, a presented case’s raw score is normalized by dividing the raw score by the maximum possible match score for this case.” (Rice 1507.) Thus, EZ Reader meets the elements of this claim.

**6. EZ Reader anticipates claim 38.**

188. Claim 38 requires that the predetermine response be altered in accordance with the interpretation of the message prior to delivery. The Rice paper discloses that “[i]f a similar previous email is found, EZ Reader infers that the response used previously can be used (or

adapted) for the incoming email. (Rice 1512 (emphasis added).) Thus, EZ Reader discloses this limitation.

**E. GREBE anticipates claims 26.**

189. As disclosed in section V.B.5, GREBE is a legal reasoning system I designed as part of my doctoral dissertation. GREBE anticipates claim 26 of the '947 patent.

190. **Non-interactive electronic message:** The preamble requires that the method process a “non-interactive electronic message.” GREBE operates on a non-interactive electronic message, specifically a relational structure containing the fact pattern of the incoming case. *See, e.g.*, GREBE 44. *See also* GREBE 118-138 (listing seven hypotheticals uses as input to Grebe.) Thus, GREBE meets this claim element.

191. **Receiving an electronic message:** As detailed above, GREBE receives messages consisting of case hypotheticals. Thus, GREBE meets this claim element.

192. **Interpreting the electronic message:** GREBE interprets the message using a rule-base and case-base knowledge engine: